

Major Mines of Nevada 2018



Mineral Industries in Nevada's Economy



University of Nevada, Reno

NEVADA COMMISSION ON MINERAL RESOURCES

Division of Minerals

The seven-member Commission on Mineral Resources is a public body appointed by the Governor that provides advice and recommendations to the Governor and Legislature on matters relating to mineral resources. The Division's mission is to encourage and assist in the responsible exploration for, and the production of, minerals, oil, gas, and geothermal energy which are economically beneficial to the State.

The Division is involved in activities relating to mineral, oil, gas, and geothermal development. Staff compiles annual data on all active mines in Nevada and maintains the State's mine registry. Information concerning mining operations and production is made available to the public through this yearly publication. Educational documents and materials concerning the minerals industry are also produced. The Division often acts as a cooperating agency in federal land use actions at the request of the Governor's office.

The Division is the fluid minerals permitting agency for drilling activities on both public and private lands in Nevada. Staff also monitors production of oil, gas, and geothermal resources to ensure proper management and conservation. Nevada is a member of the Interstate Oil and Gas Compact Commission.

The Division's abandoned mine lands program provides for public safety by identifying and ranking dangerous conditions at mines that are no longer operating, and by securing dangerous orphaned mine openings. The program continually urges the public to recognize and avoid hazardous abandoned mines.

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Nigel Bain (Large-Scale Mining)
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Cover photo: Metaquartzite architectural and decorative stone products from Las Vegas Rock quarries (Mount Potosi and Goodsprings, NV) and processing facility (Jean, NV), Clark County (*Courtney Brailo photos*).



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By Rich Perry and Mike Visher

The Nevada Division of Minerals

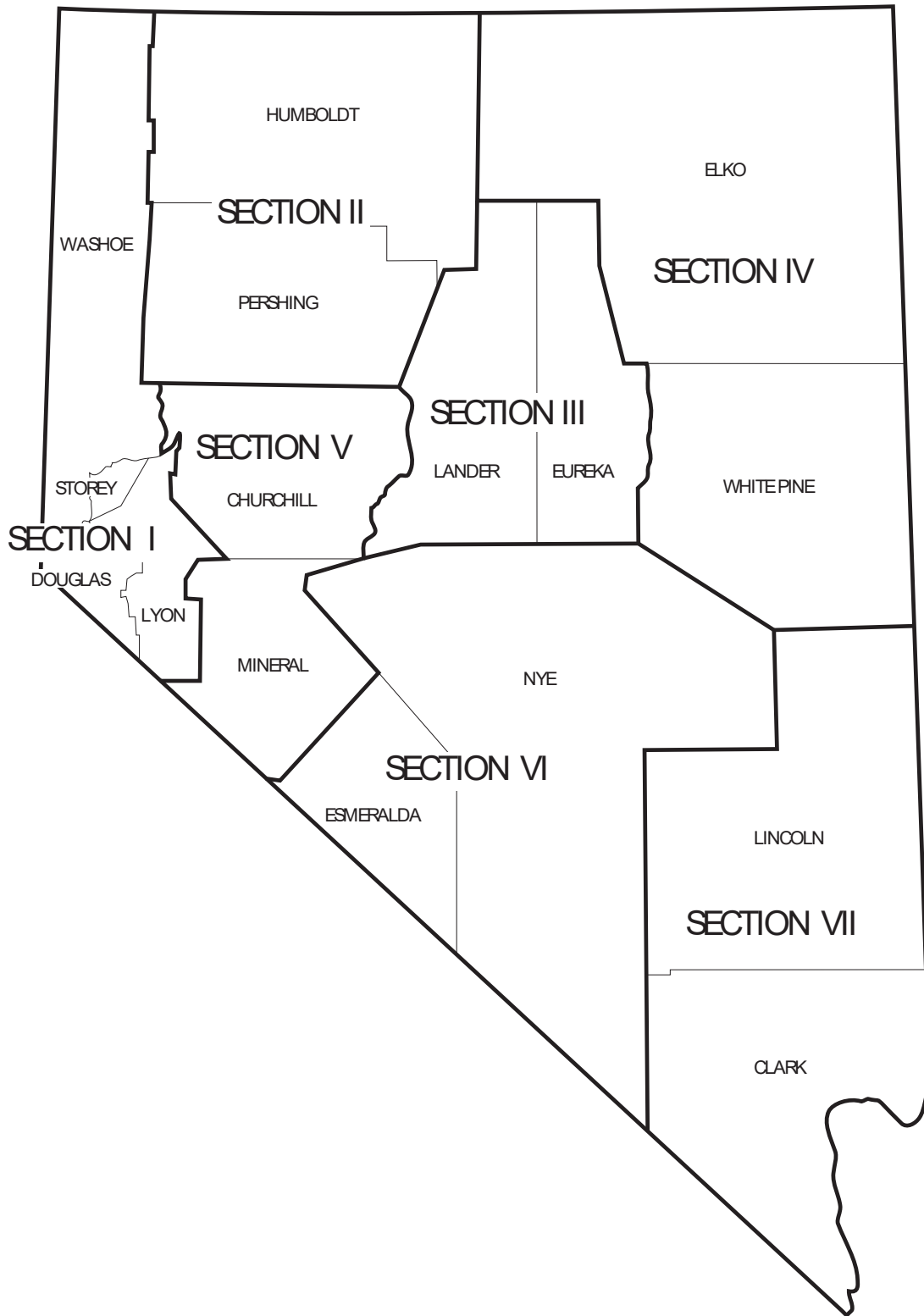
2019

This is the thirtieth of an annual series of summary reports on major mines of Nevada. Sand and gravel operations are not included. Information on employment and production for the calendar year 2018 was provided by the individual mine operators. The Nevada Division of Minerals maintains a complete register of Nevada mines. For further information, contact them at 400 W. King, Suite 106, Carson City, Nevada 89703 or call (775) 684-7040, fax (775) 684-7052, or visit their Web site at <http://minerals.nv.gov>.

College of Science
Mackay School of Earth Sciences and Engineering



University of Nevada, Reno



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Major mines, oil fields, and geothermal plants, 2018 (centerfold map)

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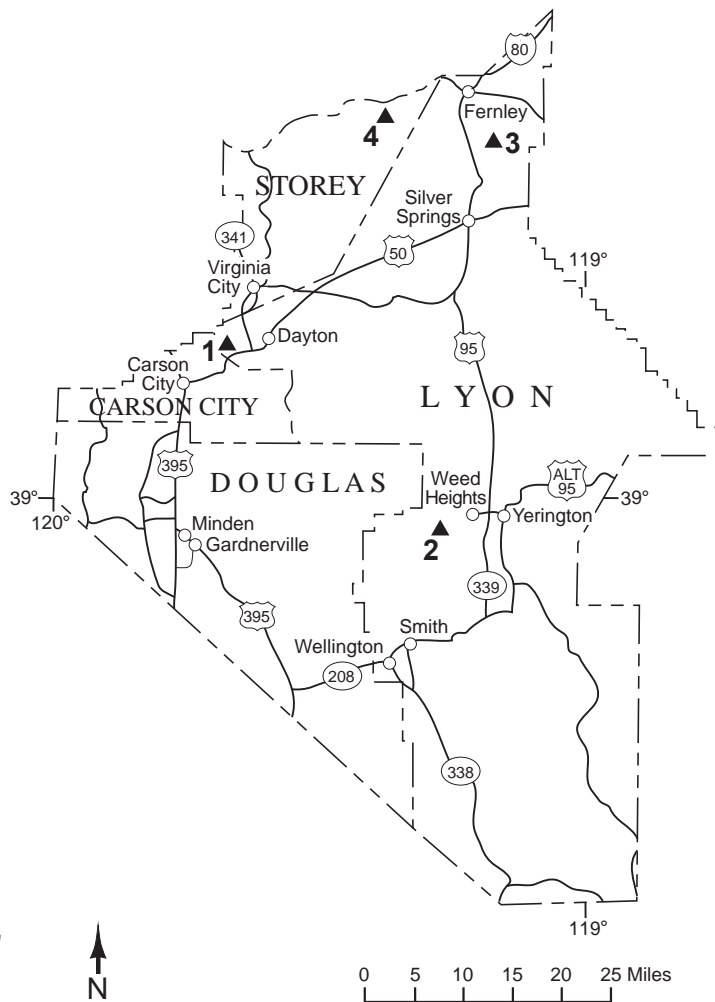
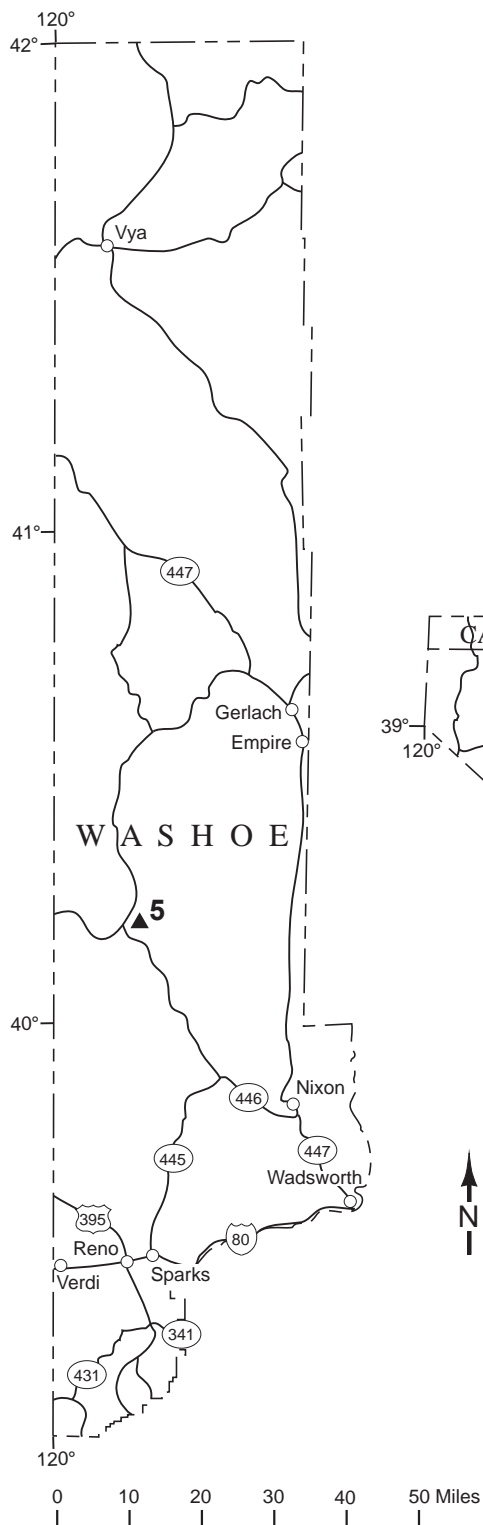
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Section I

Lyon County

Adams Claim Gypsum Mine (1)

Operator:

ACG Materials, dba Art Wilson Co.
P.O. Box 20160
Carson City, NV 89721
775-882-0700 Fax: 882-0790
Company employees: 43

Production:

Gypsum - 359,556 tons
Limestone - 1,456 tons

Ludwig Mine (2)

Operator:

ACG Materials, dba Art Wilson Co.
P.O. Box 20160
Carson City, NV 89721
775-882-0700 Fax: 882-0790
Company employees: 3

Production:

Gypsum - 39,803 tons
Limestone - 1,350 tons

NCC Fernley Operations (3)

Operator:

Nevada Cement Co.
P.O. Box 840
Fernley, NV 89408
775-575-2281 Fax: 575-4387
Company employees: 117

Production:

Limestone - 113,811 tons

Storey County

Clark Mine (4)

Operator:

EP Minerals, LLC
640 Clark Station Rd.
Sparks, NV 89434
775-824-7700 Fax: 824-7715
Company employees: 4

Production:

Diatomite - 102,358 tons

Washoe County

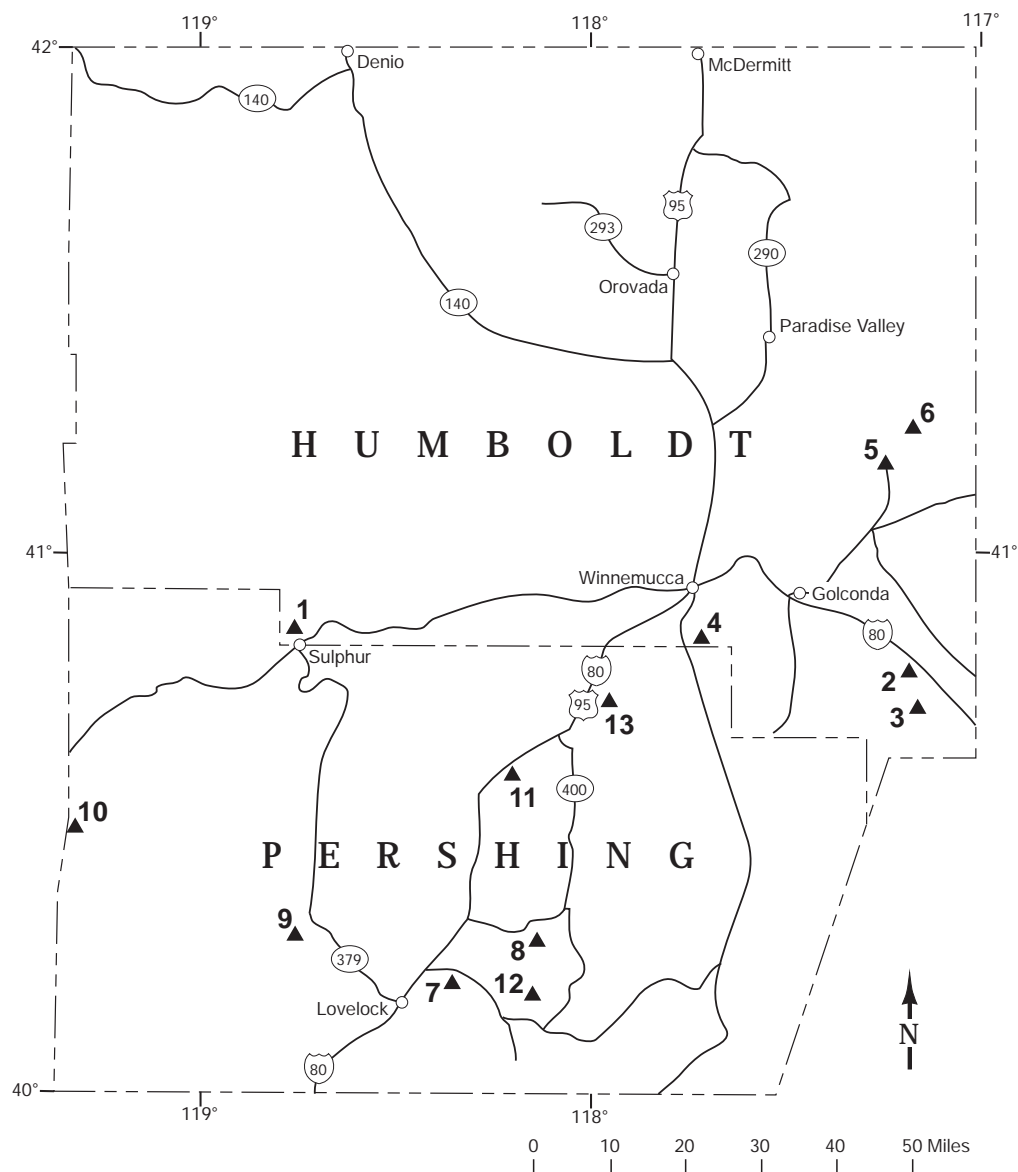
NCC Flanigan Mine (5)

Operator:

Nevada Cement Co.
P.O. Box 840
Fernley, NV 89408
775-575-2281 Fax: 575-4387

Production:

Specialty clays - 510 tons



Section II

Humboldt County

Hycroft Mine (1)

Operator:

Hycroft Mining Company
P.O. Box 3030
Winnemucca, NV 89446
775-623-5260 Fax: 201-1045
Company employees: 86
Contract employees: 75

Production:

No mine production in 2018

Lone Tree Complex (2)

Operator:

Newmont Mining Corp.
1655 Mountain City Highway
Elko, NV 89801
775-778-4000 Fax: 778-4360
Company employees: 39
Contract employees: 33

Production:

Gold - 24,253 oz

Marigold Mine (3)

Operator:

SSR Mining
P.O. Box 160
Valmy, NV 89438
775-502-4800
Company employees: 400
Contract employees: 18

Production:

Gold - 205,161 oz
Silver - 4,315 oz

MIN-AD Mine (4)

Operator:

MIN-AD, Inc.
P.O. Box 39
Winnemucca, NV 89446
775-623-5944 Fax: 623-9028
Company employees: 15

Production:

Dolomite - 42,832 tons

Turquoise Ridge Joint Venture (5)

Operator:

Barrick Gold Corporation
2055 Getchell Mine Road
Golconda, NV 89414
775-529-5001 Fax: 748-3125
Company employees: 480
Contract employees: 160

Production:

Gold - 444,720 oz

Twin Creeks Mine (6)

Operator:

Newmont Mining Corp.
1655 Mountain City Highway
Elko, NV 89801
775-778-4000 Fax: 778-4360
Company employees: 470
Contract employees: 227

Production:

Gold - 359,042 oz
Silver - 206,161 oz

Pershing County

Buff/Satin Mine (7)

Operator:

Vanderbilt Minerals, LLC
P.O. Box 6660
Pahrump, NV 89041
775-537-6976 Fax: 537-6879
Company employees: 4

Production:

Specialty Clay - 3,616 tons

Coeur Rochester Mine (8)

Operator:

Coeur Rochester, Inc.
P.O. Box 1057
Lovelock, NV 89419
775-273-7995
Company employees: 289
Contract employees: 28

Production:

Gold - 54,388 oz
Silver - 5,037,983 oz

Colado Mine (9)

Operator:

EP Minerals, LLC
P.O. Box 959
Lovelock, NV 89419
775-824-7591 Fax: 824-7595
Company employees: 35

Production:

Diatomite - 208,156 tons

Empire Gypsum Mine (10)

Operator:

Empire Mining Co., LLC
P.O. Box 157
Gerlach, NV 89412
775-800-4569 Fax: 702-921-9552
Company employees: 40
Contract employees: 1

Production:

Gypsum - 438,167 tons

Florida Canyon Mine (11)

Operator:

Rye Patch Mining U.S.
P.O. Box 330
Imlay, NV 89418
775-538-7300 Fax: 538-7324
Company employees: 187
Contract employees: 11

Production:

Gold - 46,878 oz
Silver - 31,775 oz

Relief Canyon Limestone Quarry (12)

Operator:

Nevada Cement Company
P.O. Box 840
Fernley, NV 89408
775-575-2281 Fax: 575-4387
Company employees: 6

Production:

Limestone - 62,335 tons

Sunrise Placer Mine (13)

Operator:

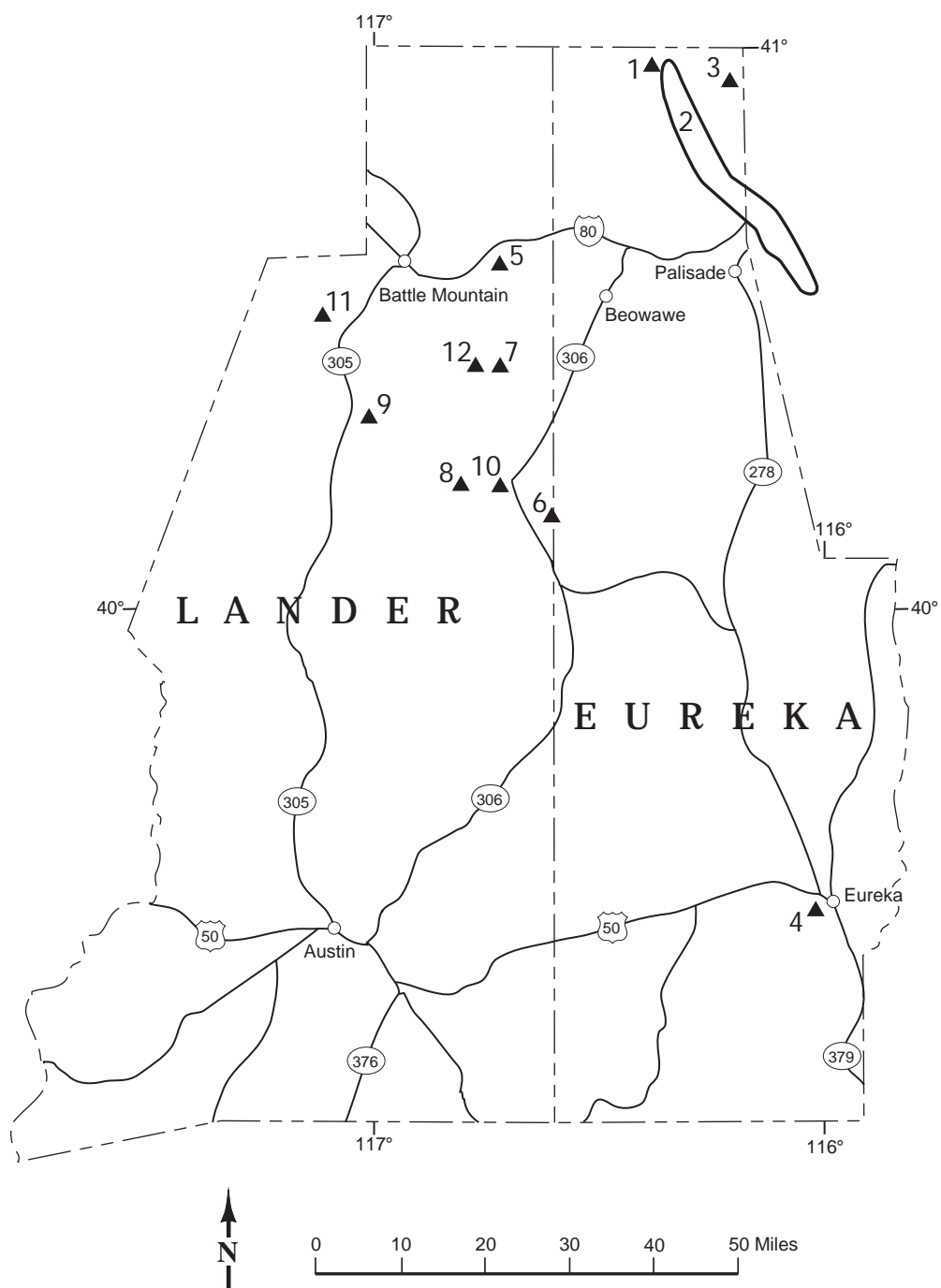
Sunrise Minerals, LLC
9405 Betty Ln.
Winnemucca, NV 89445
775-848-2580
Company employees: 8

Production:

Gold - 268 oz
Silver - 150 oz



*Coeur Rochester Mine, Pershing County
(Garrett Wake photo).*



Section III

Eureka County

Betze-Post Mine (1)

Operator:

Barrick Goldstrike Mines, Inc.
P.O. Box 29
Elko, NV 89803
775-748-1001

Company employees: 1,217

Production:

Gold - 458,287 oz
Silver - 70,621 oz

Ruby Hill Mine (4)

Operator:

Ruby Hill Mining Co.
P.O. Box 676
Eureka, NV 89316
775-401-6435

Company employees: 16

Production:

Gold - 4,648 oz
Silver - 3,584 oz

Eastern Nevada Operations (Carlin Operations) (2)

Operator:

Newmont Mining Corp.
1655 Mountain City Highway
Elko, NV 89801
775-778-4000 Fax: 778-4360
Company employees: 2,147
Contract employees: 435

Production:

Gold - 926,789 oz
Silver - 74,494 oz

Maggie Creek Plant (3)

Operator:

Progressive Contracting, Inc.
P.O. Box 1930
St. George, UT 84771
435-628-6662 Fax: 628-7314
Company employees: 7
Contract employees: 5

Shipped:

Barite - 58,834 tons

Lander County

Argenta Mine (5)

Operator:

Baker Hughes Oilfield Operations, LLC
P.O. Box 277
Battle Mountain, NV 89820
775-625-8700 Fax: 635-5455
Company employees: 18

Mined:

Barite - 105,000 tons

Cortez Hills Mine (6)

Operator:

Barrick Cortez, Inc.
HC66 Box 1250
Crescent Valley, NV 89821
775-468-4400 Fax: 468-4496
Company employees: 322
Contract employees: 130

Production:

(underground only, excluding the open-pit)

Gold - 290,457 oz
Silver - 9,772 oz

Fire Creek Mine (7)

Operator:

Klondex Gold and Silver Mining Co.
(Acquired by Hecla Mining Co., July 2018)
4000 W. Winnemucca Blvd.
Winnemucca, NV 89445
775-621-5535 Fax: 328-7176
Company employees: 91
Contract employees: 39

Production:

Gold - 65,450 oz
Silver - 69,004 oz

Greystone Mine (8)

Operator:

M-I Swaco
P.O. Box 370
Battle Mountain, NV 89820
775-635-5135
Company employees: 48

Shipped:

Barite - 233,895 tons

Mountain Spring Mine (9)

Operator:

M-I Swaco
P.O. Box 370
Battle Mountain, NV 89820
775-635-5135
Company employees: 4

Shipped:

Barite - 48,452 tons

Pipeline Mine (10)

Operator:

Barrick Cortez, Inc.
HC66 Box 1250
Crescent Valley, NV 89821
775-468-4400 Fax: 468-4496
Company employees: 932
Contract employees: 425

Production:

(includes the Cortez Hills open-pit)

Gold - 974,381 oz
Silver - 9,049 oz

Phoenix Mine (11)

Operator:

Newmont Mining Corp.
P.O. Box 1657
Battle Mountain, NV 89820
775-778-4000 Fax: 778-4360
Company employees: 487
Contract employees: 107

Production:

Gold - 217,015 oz
Silver - 826,838 oz
Copper - 32,102,979 pounds

Slaven Canyon Mine (12)

Operator:

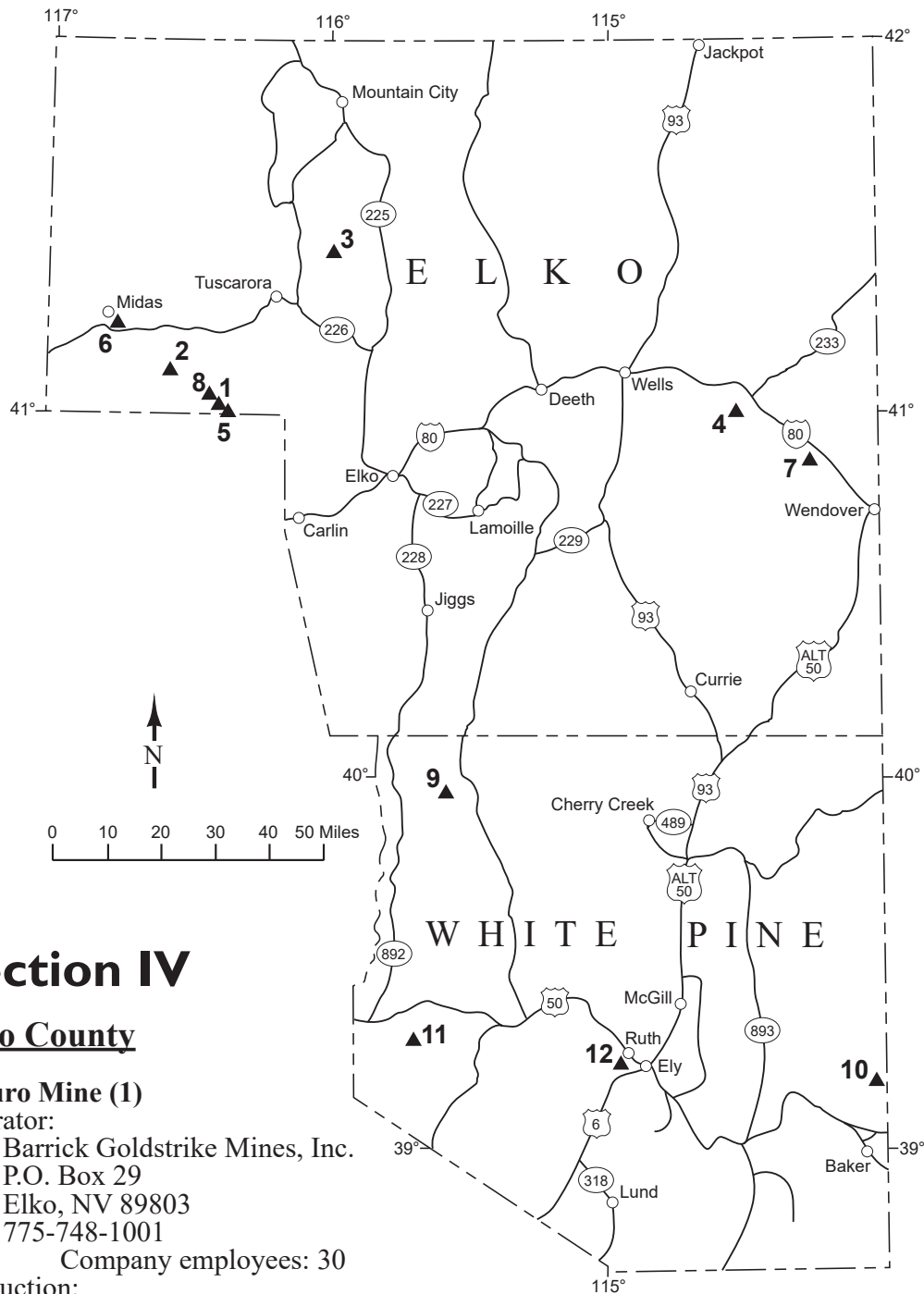
Baker Hughes Oilfield Operations, LLC
P.O. Box 277
Battle Mountain, NV 89820
775-625-8700 Fax: 635-5455
Company employees: 2

Mined:

Barite - 95,260 tons



***Open pit and copper plates from Newmont's Phoenix Mine, Lander County
(Rich Perry photos).***



Section IV

Elko County

Arturo Mine (1)

Operator:

Barrick Goldstrike Mines, Inc.
P.O. Box 29
Elko, NV 89803
775-748-1001

Company employees: 30

Production:

Gold - 52,451 oz

Hollister Mine (2)

Operator:

Klondex Hollister Mine, Inc.
(Acquired by Hecla Mining Co., July 2018)
4000 W. Winnemucca Blvd.
Winnemucca, NV 89445
775-621-5535 Fax: 328-7176
Company employees: 77
Contract employees: 28

Production:

Gold - 26,612 oz
Silver - 246,080 oz

Jerritt Canyon Mine (3)

Operator:

Jerritt Canyon Gold, LLC
HC31 Box 78
Elko, NV 89801
775-738-5600 Fax: 758-9233
Company employees: 250
Contract employees: 150

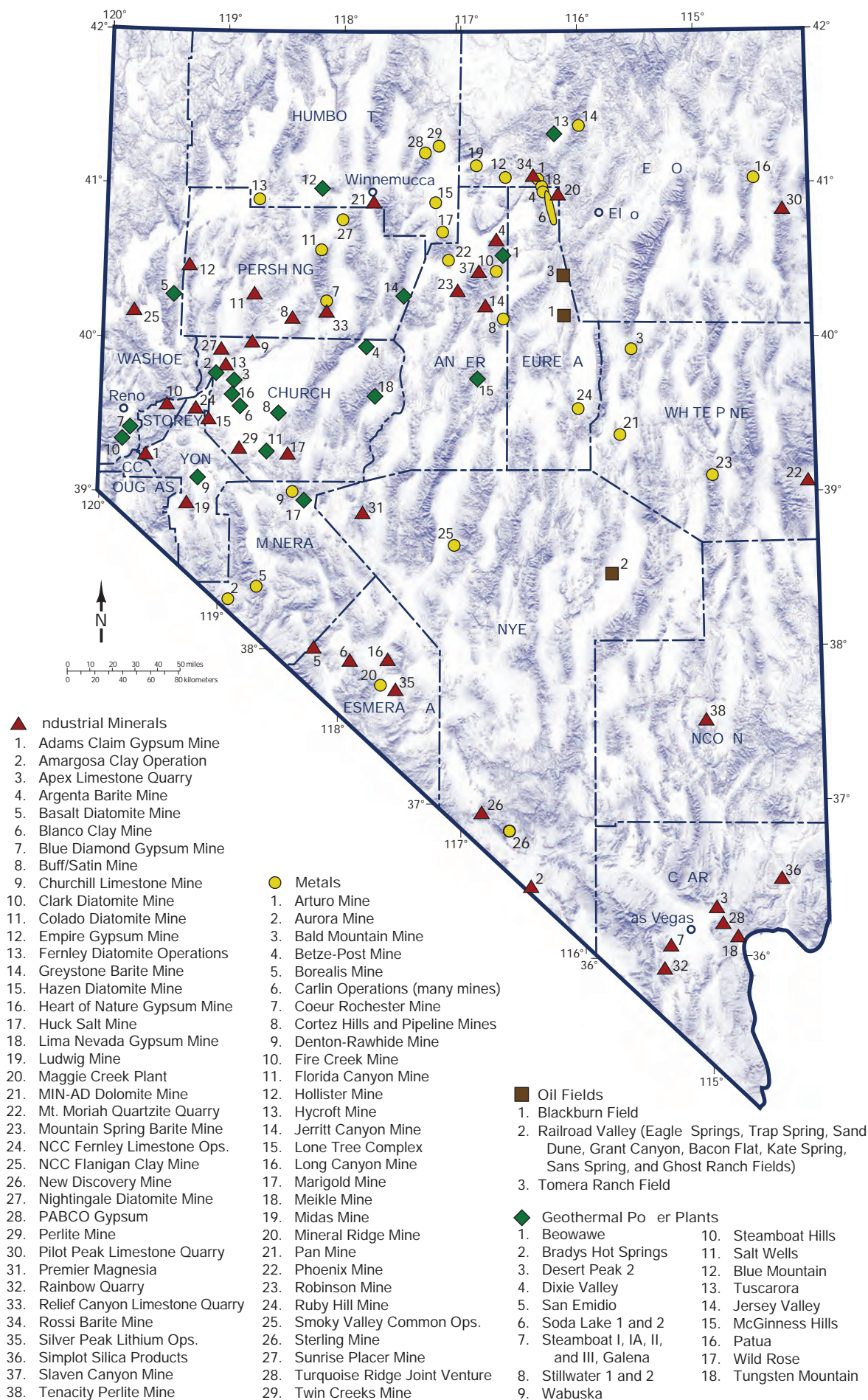
Production:

Gold - 145,064 oz

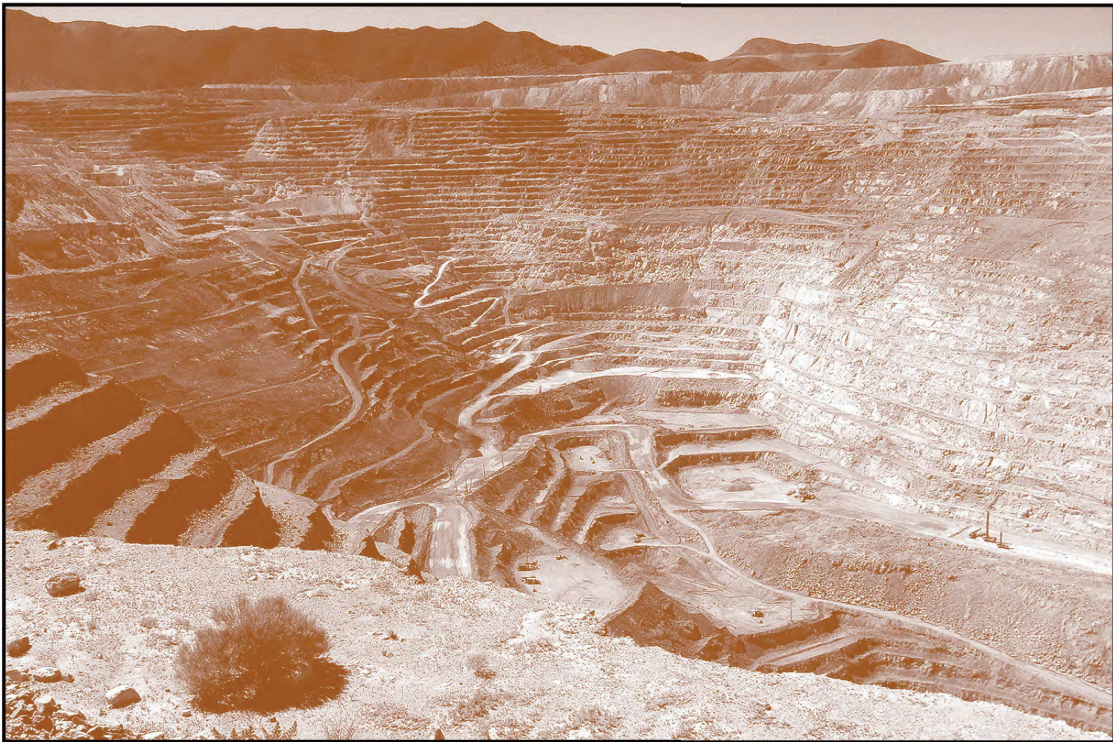
***Elko and White Pine continued on page 15
after the centerfold***



***Looking southeast at the Smoky Valley Common Operations,
Nye County (Garrett Wake photo).***



Major mines, oil fields, and geothermal plants, 2018.



***Round Mountain open-pit mine, Smoky Valley Common Operations,
Nye County (Mike Richardson photo).***

Section IV (continued)

Long Canyon Mine (4)

Operator:

Newmont USA, Ltd.
1655 Mountain City Highway
Elko, NV 89801
775-778-4000

Company employees: 271

Production:

Gold - 170,205 oz

Meikle Mine (5)

Operator:

Barrick Goldstrike Mines, Inc.
P.O. Box 29
Elko, NV 89803
775-748-1001 Fax: 748-1240

Company employees: 599

Production:

Gold - 337,376 oz

Silver - 15,918 oz

Midas Mine (6)

Operator:

Klondex Midas Operations, Inc.
(Acquired by Hecla Mining, Co., July 2018)
4000 W. Winnemucca Blvd.
Winnemucca, NV 89445
775-621-5535 Fax: 328-7176

Company employees: 107

Contract employees: 33

Production:

Gold - 13,852 oz

Silver - 164,054 oz

Pilot Peak Quarry (7)

Operator:

Graymont
P.O. Box 2520
West Wendover, NV 89883
775-483-5463 Fax: 801-262-3942

Company employees: 69

Production:

Limestone - 1,306,610 tons

Rossi Mine (8)

Operator:

Halliburton Energy Solutions
912 Dunphy Ranch Rd.
Battle Mountain, NV 89820
720-593-7110

Company employees: 6

No mine production in 2018

White Pine County

Bald Mountain Mine (9)

Operator:

KG Mining (Bald Mountain), Inc.
435 Jiggs Hwy., Unit 16
Spring Creek, NV 89815
775-237-7100 Fax: 237-7101

Company employees: 550

Contract employees: 140

Production:

Gold - 284,359 oz

Silver - 21,793 oz

Mt. Moriah Quarry (10)

Operator:

Mt. Moriah Stone Quarries
#10 Hatch Rock Rd.
Baker, NV 89311
435-855-2232 Fax: 855-2332

Company employees: 45

Production:

Quartzite - 5,415 tons

Pan Mine (11)

Operator:

Fiore Gold (US), Inc.
P.O. Box 150278
Ely, NV 89315
775-396-1901

Company employees: 43

Contract employees: 93

Production:

Gold - 37,403 oz

Robinson Mine (12)

Operator:

KGHM International, Ltd.
P.O. Box 382
Ruth, NV 89319
775-289-7000 Fax: 289-7349

Company employees: 620

Contract employees: 135

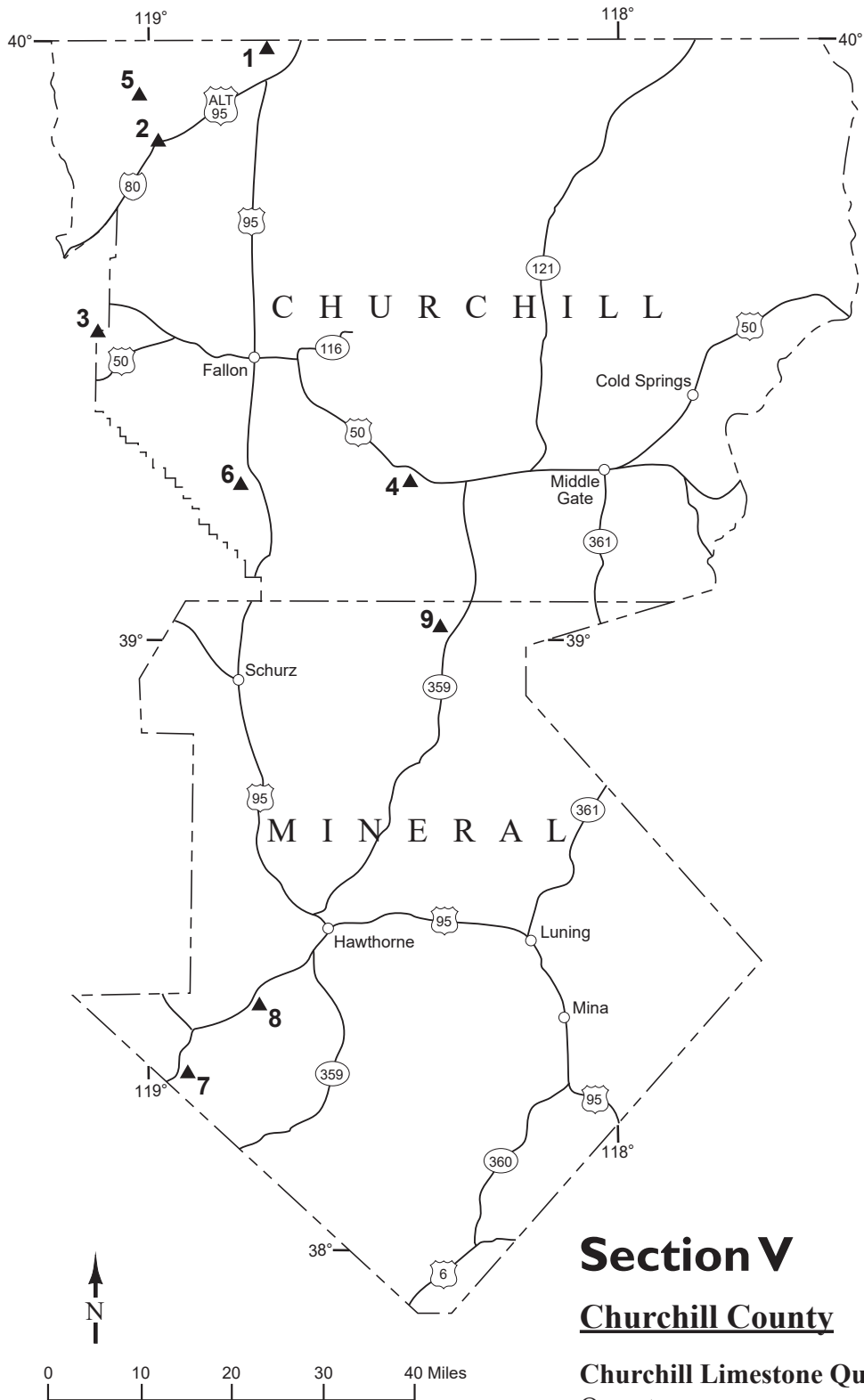
Production:

Copper - 112,552,787 pounds

Gold - 38,990 oz

Molybdenite - 459,959 pounds

Silver - 171,679 oz



Section V

Churchill County

Churchill Limestone Quarry (1)

Operator:

Nevada Cement Co.

P.O. Box 840

Fernley, NV 89408

775-575-2281 Fax: 575-4387

Company employees: 6

Production:

Limestone - 483,518 tons

Fernley Diatomite Operations (2)

Operator:

EP Minerals, LLC
P.O. Box 860
Fernley, NV 89408
775-423-6668 Fax: 423-6411
Company employees: 35

Production:

Diatomite - 35,427 tons

Hazen Mine (3)

Operator:

EP Minerals, LLC
640 Clark Station Rd.
Sparks, NV 89434
775-824-7700 Fax: 824-7715
Company employees: 2
Contract employees: 4

Production:

Diatomite - 24,579 tons

Huck Salt (4)

Operator:

Huck Salt Company
2900 Phritzie Ln.
Fallon, NV 89406
775-423-2055 Fax: 423-0467
Company employees: 11

Shipped:

Salt - 19,900 tons

Nightingale Mine (5)

Operator:

Imerys Filtration Minerals, Inc.
100 Front Street
Fernley, NV 89408
775-575-2536
Company employees: 15
Contract employees: 5

Production:

Diatomite - 26,570 tons

Perlite Mine (6)

Operator:

EP Minerals, LLC
640 Clark Station
Sparks, NV 89434
775-824-7700 Fax: 824-7715
Company employees: 2

Production:

Perlite - 15,540 tons

Mineral County**Aurora Mine (7)**

Operator:

Klondex Aurora Mine, Inc.
(Acquired by Hecla Mining Co., July 2018)
4000 W. Winnemucca Blvd.
Winnemucca, NV 89445
775-621-5535 Fax: 328-7176
Company employees: 12
Contract employees: 2

Production:

Gold - 3,700 oz
Silver - 37,174 oz

Borealis Mine (8)

Operator:

Borealis Mining Company, LLC
P.O. Box 549
Hawthorne, NV 89415
775-826-7567
Company employees: 6

Production:

Gold - 420 oz
Silver - 394 oz

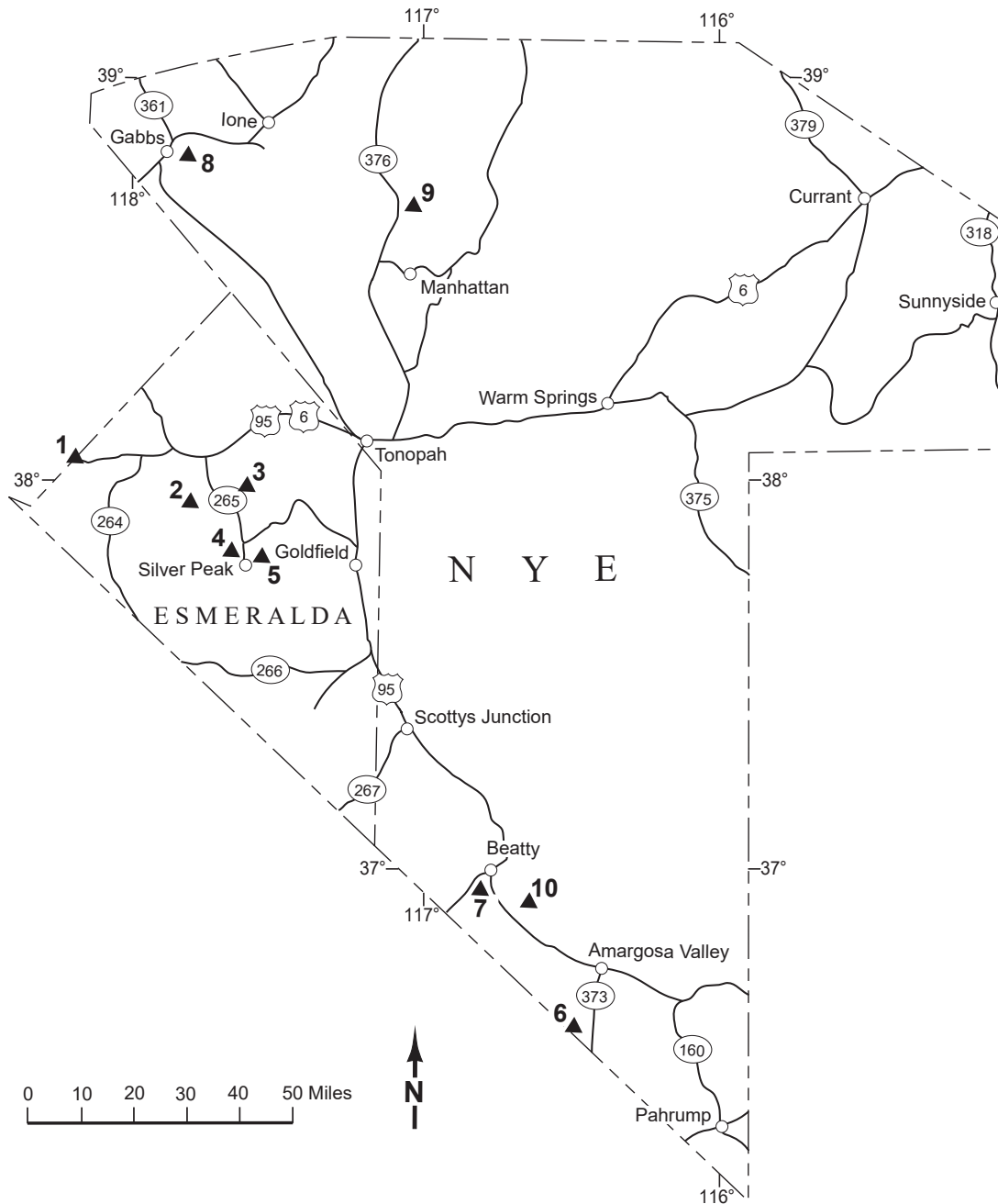
Denton-Rawhide Mine (9)

Operator:

Rawhide Mining, LLC
P.O. Box 2070
Fallon, NV 89407
775-945-1015 Fax: 945-1213
Company employees: 55
Contract employees: 1

Production:

Gold - 15,444 oz
Silver - 208,875 oz



Section VI

Esmeralda County

Basalt Diatomite Mine (1)

Operator:

Grefco Minerals, Inc.
P.O. Box 278
Dyer, NV 89010
775-573-2422

Company employees: 15

Production:

Diatomite - 2,268 tons

Blanco Mine (2)

Operator:

Vanderbilt Minerals, Inc.
P.O. Box 6660
Pahrump, NV 89041
775-537-6976 Fax: 537-6879

Company employees: 4

Production:

Specialty Clays - No mining
occurred in 2018

Heart of Nature (3)**Operator:**

Heart of Nature, LLC
3055 Saint Rose Parkway #778203
Henderson, NV 89052
702-462-6690

Company employees: 1

Contract employees: 4

Production:

Gypsum/sulfur soil amendment
- 9,992 tons

Mineral Ridge Mine (4)**Operator:**

Mineral Ridge Gold, LLC
1910 Idaho St., Ste. 102-550
Elko, NV 89801
775-753-4778 Fax: 775-753-4780

Company employees: 18

Production:

Gold - 7,497 oz
Silver - 3,444 oz

Silver Peak Lithium Operations (5)**Operator:**

Rockwood Lithium, Inc.
P.O. Box 98
Silver Peak, NV 89047
775-937-2222 Fax: 937-2317

Company employees: 70

Contract employees: 30

Shipped:

Lithium compounds - 12,908,794 lbs

Nye County**Amargosa Clay Operation (6)****Operator:**

Lhoist North America
P.O. Box 86
Amargosa Valley, NV 89020
775-372-5341 Fax: 372-5320

Company employees: 33

Contract employees: 3

Production:

Specialty clays - 144,830 tons

New Discovery Mine (7)**Operator:**

Vanderbilt Minerals, LLC
P.O. Box 6660
Pahrump, NV 89041
775-537-6976 Fax: 537-6879

Company employees: 4

Production:

Specialty clays - No mining
occurred in 2018

Premier Magnesia (8)**Operator:**

Premier Magnesia, LLC
P.O. Box 177
Gabbs, NV 89409
775-285-2601 Fax: 285-4021

Company employees: 110

Contract employees: 15

Shipped:

Magnesium compounds - 125,945 tons

Smoky Valley Common Operation (9)**Operator:**

Round Mountain Gold Corp.
P.O. Box 480
Round Mountain, NV 89045
775-377-2366 Fax: 377-3224

Company employees: 839

Contract employees: 291

Production:

Gold - 375,741 oz
Silver - 798,249 oz

Sterling Mine (10)**Operator:**

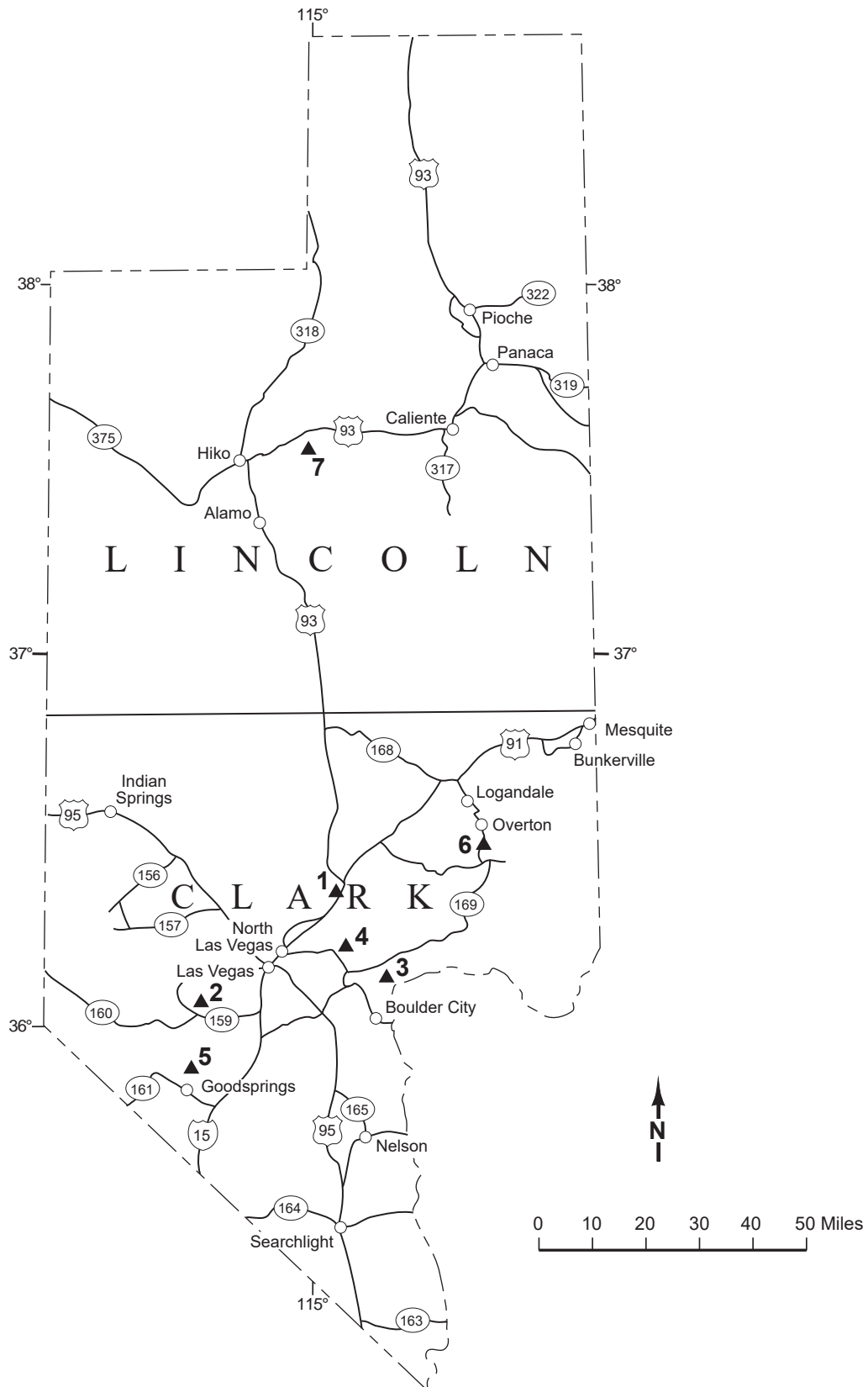
Coeur Sterling
P.O. Box 549
Beatty, NV 89003
702-846-2606

Company employees: 12

Contract employees: 6

Production:

Gold - 280 oz



Section VII

Clark County

Apex Quarry (1)

Operator:

Lhoist North America
12101 N. Las Vegas Blvd.
North Las Vegas, NV 89165
702-227-4916

Company employees: 102

Contract employees: 4

Production:

Limestone - 1,314,000 tons
Dolomite - 270,000 tons

Blue Diamond Hill Mine (2)

Operator:

Gypsum Resource Materials, LLC
P.O. Box 147
Blue Diamond, NV 89004
702-482-3538

Company employees: 48

Contract employees: 3

Production:

Gypsum - 1,777,865 tons

Lima Nevada Gypsum Mine (3)

Operator:

H. Lima Nevada, LLC
704 E. Yosemite
Manteca, CA 95336
209-239-6787 Fax: 239-6778

Company employees: 10

Production:

Gypsum - 57,000 tons

PABCO Gypsum Mine (4)

Operator:

Pacific Coast Building Products, Inc.
P.O. Box 364329
North Las Vegas, NV 89036
702-407-3700 Fax: 643-6249

Company employees: 18

Contract employees: 1

Production:

Gypsum - 1,394,825 tons

Rainbow Quarry (5)

Operator:

Las Vegas Rock, Inc.
P.O. Box 19118
2 Jean Prison Rd.
Jean, NV 89019
702-791-7625 Fax: 896-4533

Company employees: 11

Production:

Meta-quartzite blocks - 4,200 tons

Simplot Silica Products (6)

Operator:

J.R. Simplot Company
P.O. Box 308
Overton, NV 89040
702-397-2667 Fax: 397-2798

Company employees: 38

Shipped:

Silica sand - 1,000,000 tons

Lincoln County

Tenacity Perlite Mine (7)

Operator:

Wilkin Mining & Trucking, Inc.
HC 34 Box 199
Caliente, NV 89008
775-728-4463

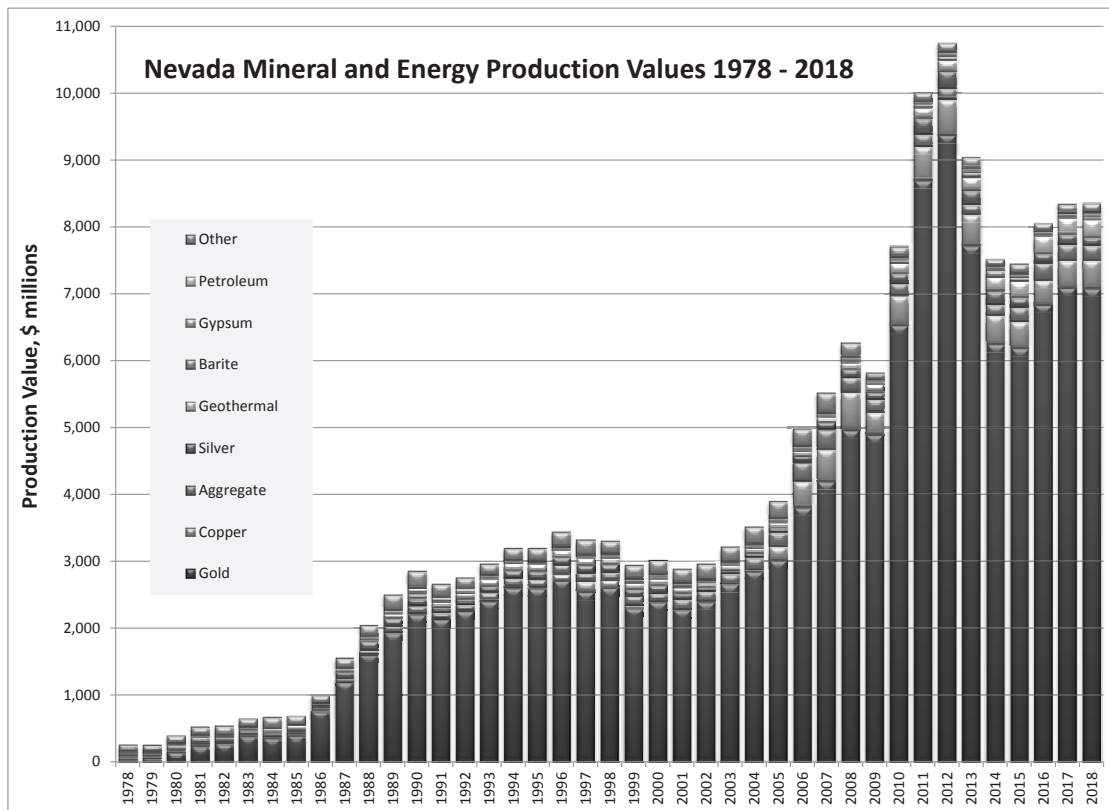
Company employees: 9

Production:

Perlite - 1,637 tons

Summary of 2018 production

Gold	5,581,160	ounces
Silver	8,011,408	ounces
Barite (shipped)	464,334	tons
Copper	144,655,766	pounds
Diatomite	399,358	tons
Dolomite	312,832	tons
Gypsum	3,339,891	tons
Limestone	3,283,080	tons
Lithium compounds (shipped)	12,908,794	pounds
Magnesium compounds (shipped)	125,945	tons
Molybdenite	459,959	pounds
Perlite	17,087	tons
Salt (shipped)	19,900	tons
Silica sand (shipped)	716,374	tons
Specialty clays	178,956	tons



Economic Impacts of Mining in Nevada—2018

Nevada's mining industry recorded approximately \$8.42 billion in total value of all commodities in 2018, representing a slight 0.3% increase from the \$8.39 billion value in 2017. Nearly 86% of the value was driven by gold and silver, which contributed over \$7.2 billion, based on the actual gross proceeds reported to the Nevada Department of Taxation. According to Kitco Metals Inc. (www.kitco.com), the average prices for gold and silver in 2018 were \$1,268.49 and \$15.71 per troy ounce, respectively. Nevada led the nation in 2018 in the production of gold, barite, lithium compounds and magnesium compounds. Nevada produced a wide variety of other mineral and energy commodities such as clays, copper, diatomite, dolomite, geothermal energy, gypsum, lapidary and gem stones, limestone, molybdenite, oil, perlite, salt, silica sand, silver, and specialty aggregates. A summary of commodity production amounts, value, and year over year percentage changes can be seen in table 1.

Production Highlights

Nevada's gold production was 5,581,160 troy ounces in 2018 compared to 5,641,623 troy ounces in 2017, a decrease of 1.1%. According to the USGS, Nevada remains the nation's top gold producer with about 83% (174 metric tons) of the U.S. total (210 metric tons) and would rank 5th in world gold production behind China (400), Australia (310), Russia (295), and Canada (185). A summary of 2018 metal production, ranked by producer, is shown in table 2.

Employment

According to the Nevada Department of Employment, Training, and Rehabilitation, the Nevada minerals industry, including support activities and oil and gas extraction, directly employed an average of 14,787 people in 2018. The average yearly pay for mineral industry employees during this time was \$97,600, the third highest average private employment sector in the state, behind Company Management and Utilities. Mining employment has remained an important factor in Nevada.

Table 1. Summary of 2018 Nevada Mineral Commodity Production

Commodity	Production Amount	Unit	YOY Change (%)	YOY Value Change (%)	Value (\$)
Gold	5,581,160	ounces	-1.1%	-0.2%	\$7,079,645,648
Silver	8,011,408	ounces	-5.5%	-12.9%	\$125,859,220
Barite (shipped)	464,334	tons	18.6%	48.6%	\$46,795,371
Copper	144,655,766	pounds	-0.8%	3.0%	\$428,181,067
Diatomite	399,358	tons	44.2%	-3.5%	\$46,734,876
Dolomite	312,832	tons	-0.9%	-2.4%	\$4,095,225
Gypsum	3,339,891	tons	-4.1%	-0.9%	\$42,344,242
Limestone	3,283,080	tons	2.1%	13.8%	\$39,219,511
Lithium compounds (shipped)	12,908,794	pounds	26.1%	63.0%	\$64,595,876
Magnesium compounds (shipped)	125,945	tons	12.3%	3.0%	\$8,139,844
Molybdenite	459,959	pounds	-29.5%	5.9%	\$5,643,697
Perlite	17,087	tons	-23.4%	-21.1%	\$656,137
Salt (shipped)	19,900	tons	-19.9%	23.7%	\$677,678
Silica sand (shipped)	716,374	tons	-1.5%	-1.1%	\$19,626,602
Specialty clays	178,956	tons	37.7%	3.8%	\$11,670,736
Geothermal energy (sold)	3,466,978	megawatt hours	4.3%	9.7%	\$265,793,425
Oil (sold)	251,022	barrels	-10.7%	5.8%	\$13,632,793
Aggregates	31,587,000	tons	-12.9%	-10.4%	\$215,000,000
Total Value					\$8,418,311,948

Permitting and Reclamation

Before mining can begin, plans of operation must be submitted and permits obtained from federal and state agencies to ensure that resources such as wildlife, air, and water are protected. Nevada and federal laws and regulations require that lands disturbed by mining activities be rehabilitated so they can be used for other activities once mining is completed. This process, called reclamation, returns mined areas to other productive practices such as livestock grazing, wildlife habitat, recreation opportunities, or other natural resource uses. To ensure that reclamation is completed, mine operators are required to post reclamation bonds that are held by government agencies. The bonds are released only after the mined area is stabilized and the reclamation goals have been met. According to the Nevada Division of Environmental Protection, approximately \$3.0 billion in reclamation bonds and other financial assurance are currently posted. Mine operators are proud of their efforts and are constantly seeking ways to enhance their reclamation technology.

Gold Reserves

Gold reserves are defined as that portion of a gold deposit known to be economically feasible for extraction. The amount of reserves is always in a state of flux, due to some reserves being mined out, additions of new reserves through exploration, and changing commodity prices and operating costs. The price of gold and the cost of production are the main factors determining reserve. Extensive gold resources are known to exist at or near many mining operations in Nevada. An increase in the gold price with all else being equal would mean many companies would be able to reclassify their resources into a reserve category. An increase in the cost of regulatory compliance or the application of gross royalties levied on production can have the same effect as a lowering of the gold price, thereby reducing reserves. For the larger operating mines, the publicly reported reserves for the year ending 2018 totaled approximately 58 million ounces of gold. Assuming similar economic conditions without any reserve replacement, current reserves are sufficient to sustain gold production

Table 2. 2018 Nevada Metal Production, by Producer

Operator	Gold (ozs)	Silver (ozs)	Copper (lbs)	Moly (lbs)
Barrick	2,425,512	105,360		
Newmont	1,808,484	1,107,493	32,102,979	
Kinross	660,100	820,042		
SSR Mining	205,161	4,315		
Jerritt Canyon Gold	145,064	NR		
Hecla (Klondex)	109,614	516,312		
Coeur	54,668	5,037,983		
Florida Canyon Mining (Alio Gold)	46,878	31,775		
KGHM International	38,990	171,679	112,552,787	459,959
Fiore Gold	37,403	NR		
Premier Gold (40% of S. Arturo)	20,980	NR		
Rawhide Mining	15,444	208,875		
Mineral Ridge Gold	7,497	3,444		
Ruby Hill Mining	4,648	3,584		
Borealis Mining	420	394		
Sunrise Minerals	268	150		
Geo-Nevada	14	NR		
New Gold Nevada	14	2		
Totals	5,581,160	8,011,408	144,655,766	459,959

near current levels in Nevada for about ten years, (table 3).

Exploration

Exploration for new deposits is an ongoing effort by both the operating companies and many others who do not operate mines in the state. Exploration geologists, drillers, assayers, and others who support exploration activities represent a significant positive economic impact, particularly in Nevada's rural areas. Exploration activity and funding are closely tied to economic conditions and commodity prices. In order to quantify the level of exploration activity and the factors responsible for those levels, the Division contracted with the Nevada Bureau of Mines and Geology, who released the results of the biennial exploration survey in early 2019, using 2017 and 2018 data. This informative report, which can be downloaded at <http://pubs.nbmng.unr.edu/NV-exploration-survey-2018-p/es2018.htm>, revealed that gold exploration accounted for 77 percent (\$353 million) of \$461 million total exploration spending, up significantly

from \$351 million total spent in 2017. Two large companies accounted for nearly 40 percent of the total spending. Approximately 784 people were directly employed by companies doing exploration activities in Nevada in 2018, up from 644 in 2017. Exploration for base metals accounted for 15 percent (\$70 million) and exploration for lithium and other energy metals continues to be significant at 5 percent (\$24 million).

Oil and Geothermal Activity

Economic activity from oil and gas exploration and production is relatively minor when compared to mining, but are locally important to the economy of east-central Nevada. In oil field terms, Nevada is considered a frontier state, meaning its potential is yet to be realized. Exploration activity and production were both negatively impacted by the price of crude in 2018. According to the U.S. Energy Information Administration, the price for a barrel of West Texas Intermediate crude in 2018 ranged from a monthly average low of \$49.52 to a high of \$70.98 and averaged \$65.19 for the

Table 3. Nevada Mine Reserves (Proven and Probable) Reported for End of Year 2018

Company	Mine	Gold (ozs)	Silver (ozs)	Copper (lbs)
Newmont	Carlin Operations	12,460,000		
Newmont	Phoenix	2,820,000		890,000,000
Newmont	Twin Creeks	5,510,000		
Newmont	Turquoise Ridge (25%)	1,980,000		
Newmont	Long Canyon	1,070,000		
Barrick	Goldstrike (OP and UG)	8,525,000		
Barrick	Cortez	8,737,000		
Barrick	Goldrush	1,993,000		
Barrick	Turquoise Ridge (75%)	6,833,000		
Barrick	South Arturo (60%)	412,000		
Coeur	Rochester	684,000	106,200,000	
Kinross	Round Mountain	2,668,000	1,669,000	
Kinross	Bald Mountain	1,347,000		
SSR	Marigold	3,060,000		
Klondex	Fire Creek	69,000	57,000	
Klondex	Hollister	8,000	82,000	
KGHM	Robinson			565,400,000
Totals		58,176,000	108,008,000	1,455,400,000

year, versus \$50.80 in 2017. Nevada's oil production in 2018 decreased from 280,970 barrels (42 gallons per barrel) in 2017 to 251,021 barrels sold, worth approximately \$13.6 million. Table 4 summarizes the number of barrels sold and wells by operator and field in 2018.

Nevada is rich in geothermal resources and is second only to California in the production of geothermal energy. For 2018, Nevada had 26 plants at 17 fields that sold approximately 3.6 million megawatt hours of electricity worth approximately \$266 million, (table 5). According to the U.S. Energy Information Association, this is enough to power about 286,000 Nevada residential homes for a year. Geothermal heat is also used for a variety of commercial, domestic and public applications in Nevada. Schools in Elko County, a

casino in Washoe County, and homes in Lincoln and Washoe counties are examples of public and private facilities using this renewable energy resource.

Conclusion

Nevada's mineral industry continued to be a major economic force in the state with a total produced value of over \$8 billion in 2018. Given a stable price and regulatory environment this situation should continue for many years to come. Nevada is a major natural resource producer and has significant mineral and energy resources. Major risks to the stability of the minerals industry are withdrawal of federal lands from mineral entry and leasing, and any gross royalties imposed on locatable mineral production.

Table 4. Nevada Oil Production in 2018

Operator	Producing Field	# of Producing Wells	Total Barrels Sold
Makcoil	Trap Spring	25	121,949
Grant Canyon	Blackburn	6	24,536
Grant Canyon	Grant Canyon	3	32,209
Kirkwood	Eagle Springs	11	27,208
Western General	Kate Spring	3	17,257
Kirkwood	Ghost Ranch	3	7,935
Makcoil	Kate Spring	1	5,320
Grant Canyon	Bacon Flat	1	5,037
Makcoil	Ghost Ranch	1	4,815
Western General	Taylor Fed (Kate Spring)	2	2,887
Grant Canyon	Sans Spring	1	1,440
Tomera Oil Fields	Tomera Ranch	2	385
Noble Energy	Huntington	1	0
Kirkwood	Sand Dune	1	43
Totals		61	251,021

Table 5. Nevada Geothermal Production in 2018 by Company

Company (including all subsidiaries)	Total Output (Sales) MWh	% of Total
Ormat Nevada Inc.	2,275,528.3	63.4%
Terra-Gen Dixie Valley LLC	595,252.9	16.6%
Cyrq Energy	482,012.0	13.4%
Enel North America Inc.	222,436.2	6.2%
Homestretch Energy/Whitegrass No. 1 LLC	11,990.1	0.3%
Total	3,587,219.5	



Pumpjack on the Santa Maria de Los Angeles oil well near the Munson Ranch field of Railroad Valley, Nye County (Courtney Brailo photo).



Geothermal production well, pipeline, and plant at Blue Mountain, Humboldt County (Lowell Price photo).

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The Nevada Bureau of Mines and Geology

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